

**PCT**WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau

## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 :

**A61M 3/00****A3**

(11) International Publication Number:

**WO 00/12148**

(43) International Publication Date:

9 March 2000 (09.03.00)

(21) International Application Number: PCT/US99/19537

(22) International Filing Date: 27 August 1999 (27.08.99)

(30) Priority Data:

60/098,118

27 August 1998 (27.08.98)

US

(71) Applicant (for all designated States except US): A-MED  
SYSTEMS INC. [US/US]; 2491 Boatman Avenue, West  
Sacramento, CA 95961 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): ABOUL-HOSN, Walid,  
N. [US/US]; 3462 Bridgeford Drive, Sacramento, CA 95834  
(US). KANZ, William, R. [US/US]; 4695 Francis Court,  
Sacramento, CA 95822 (US).(74) Agents: RYAN, Daniel, D. et al.; 633 West Wisconsin Avenue,  
Milwaukee, WI 53203 (US).(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR,  
BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD,  
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP,  
KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK,  
MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,  
SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW,  
ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG,  
ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ,  
TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI,  
FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent  
(BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE,  
SN, TD, TG).**Published***With international search report.**Before the expiration of the time limit for amending the claims  
and to be republished in the event of the receipt of amendments.*

(88) Date of publication of the international search report:

25 May 2000 (25.05.00)

(54) Title: INTRAVASCULAR CANNULATION APPARATUS AND METHODS OF USE

## (57) Abstract

This invention is a cannulation apparatus, and related methods for providing indirect access to a surgical site within a patient. The cannulation apparatus includes at least two fluid flow paths that are slidable coupled (40) (50) to one another, and selectively positional within the patient. The first, the second flow path s may be advanced through a single incision disposed remotely from the surgical field to first, and second predetermined locations within the patient. Exemplary sites for the incision include the groin region or in the neck region of the patient. The cannulation apparatus, and method of the present invention are particularly suited for use in providing cardiopulmonary support during cardiac surgery, including coronary artery bypass graft surgery. The cannulation apparatus of the present invention also provides an entry site for one or more support devices used in the surgical procedure.

